WO 2005/012490

10/575457 IAPS CC'd PCT/PTO 12 APR 2005

SEQUENCE LISTING

<110>	Elan P Zhao, Mei, Y	Byron	euti	cals	, Iņ	c.			-						
<120>	Neurop	rotect	ive	Effe	cts	of A	TF6								
<130>	08576.	0004-0	03 04		,				•			•			
<140> <14 1 >	PCT cl: 2004-0	aims p 7-30	rior	ity	to U	s 60	/491	, 565							•
<15 0> <15 1>	60/491 2003-0	, 5 65 8- 01	•										· .	•	
<160>	11						٠		•					•	
<170>	Patent:	In ver	sion	3.2										-	
<210><211><211><212><213>	1 10 DNA human,	rat,	muri <i>r</i>	ne ·				•							
<40 0> ggtgac	1 gtgg														10
<210> <211> <212> <213>	2 10 DNA human,	rat,	muri#	æ			*							• • •	
<40 0> ggtgac	2 :gtga		•				•		•						10
<210><211><211><212><213>	3 19 DNA human,	rat,	murin	I e											
<40 0> ccaato	3 ggcg gcg	gccac	9					· ·							19
<210><211><211><212><213>	4 670 PRT human	- (-			· .		.•			• .			•		. •
<400>	4							•			•			•	
Met Gl	y Glu Pr	o Ala 5	Gly	val:	Ala	G]y	Thr 10	Met	Glu	Ser	Pro	Phe 15	Ser		•
Pro Gl	y Leu Ph 20		Arg	Leu	Asp	G]ս 25	ASP	Тгр	Asp	Ser	A1a 30.	Leu	Phe	·	•
Ala Gl	u Leu Gl 35	у туг	Phe	Thr	Asp 40	Thr	Asp	Glu	Leu	G]n 45	Leu	Glü	Ala	•	
Ala As 50	n Glu Th	ır Tyr	Glu	Asn 55	As n	Phe		Asn ge 1	60	Asp	Phe	Asp	Leu		

Asp Leu Leu Pro Trp Glu Ser Asp Ile Trp Asp Ile Asm Asm Glm Ile 65 70 75 80 Cys Thr Val Lys Asp Ile Lys Ala Glu Pro Gln Pro Leu Ser Pro Ala 85 90 95 Ser Ser Ser Tyr Ser Val Ser Ser Pro Arg Ser Val Asp Ser Tyr Ser 100 105 110 Ser Thr Gln His Val Pro Glu Glu Leu Asp Leu Ser Ser Ser Gln
115 120 125 Met Ser Pro Leu Ser Leu Tyr Gly Glu Asn Ser Asn Ser Leu Ser Ser 130 140 Pro Glu Pro Leu Lys Glu Asp Lys Pro Val Thr Gly Ser Arg Asn Lys 145 150 155 Thr Glu Asn Gly Leu Thr Pro Lys Lys Lys Ile Gln Val Asn Ser Lys
165 170 175 Pro Ser Ile Gln Pro Lys Pro Leu Leu Pro Ala Ala Pro Lys Thr 180 185 Gln Thr Asn Ser Ser Val Pro Ala Lys Thr Ile Ile Ile Gln Thr Val 195 200 Pro Thr Leu Met Pro Leu Ala Lys Gln Gln Pro Ile Ile Ser Leu Gln 210 215 220 Pro Ala Pro Thr Lys Gly Gln Thr Val Leu Leu Ser Gln Pro Thr Val 225 230 240 Val Gln Leu Gln Ala Pro Gly Val Leu Pro Ser Ala Gln Pro Val Leu 255 255 Ala Val Ala Gly Gly Val Thr Gln Leu Pro Asn His Val Val Asn Val 260 265 270 Val Pro Ala Pro Ser Ala Asn Ser Pro Val Asn Gly Lys Leu Ser Val 275 280 Thr Lys Pro Val Leu Gln Ser Thr Met Arg Asn Val Gly Ser Asp Ile 290 295 300 Ala Val Leu Arg Arg Gln Gln Arg Met Ile Lys Asn Arg Glu Ser Ala 305 310 315 Cys Gln Ser Arg Lys Lys Lys Glu Tyr Met Leu Gly Leu Glu Ala. 325 330 335 Page 2

PCT/US2004/024571

Arg Leu Lys Ala Ala Leu Ser Glu Asn Glu Gln Leu Lys Lys Glu Asn 340 345 350 Gly Thr Leu Lys Arg Gln Leu Asp Glu Val Val Ser Glu Asn Gln Arg 355 360 365 Leu Lys Val Pro Ser Pro Lys Arg Arg Val Val Cys Val Met Ile Val 370 380 Leu Ala Phe Ile Ile Leu Asn Tyr Gly Pro Met Ser Met Leu Glu Gln 385 390 395 Asp Ser Arg Arg Met Asn Pro Ser Val Gly Pro Ala Asn Gln Arg Arg
405 416 His Leu Leu Gly Phe Ser Ala Lys Glu Ala Gln Asp Thr Ser Asp Gly 420 425 430 Ile Ile Gln Lys Asn Ser Tyr Arg Tyr Asp His Ser Val Ser Asn Asp 445 445 Lys Ala Leu Met Val Leu Thr Glu Glu Pro Leu Leu Tyr Ile Pro Pro 450 455 460 Pro Pro Cys Gln Pro Leu Ile Asn Thr Thr Glu Ser Leu Arg Leu Asn 465 470 475 480 His Glu Leu Arg Gly Trp Val His Arg His Glu Val Glu Arg Thr Lys 485 490 495 Ser Arg Arg Met Thr Asn Asn Gln Gln Lys Thr Arg Ile Leu Gln Gly 500 505 Val Val Glu Gln Gly Ser Asn Ser Gln Leu Met Ala Val Gln Tyr Thr
515 520 525 Glu Thr Thr Ser Ser Ile Ser Arg Asn Ser Gly Ser Glu Leu Gln Val 530 535 Tyr Tyr Ala Ser Pro Arg Ser Tyr Gln Asp Phe Phe Glu Ala Ile Arg 545 550 555 560 Arg Arg Gly Asp Thr Phe Tyr Val Val Ser Phe Arg Arg Asp His Leu 565 570 575 Leu Leu Pro Ala Thr Thr His Asn Lys Thr Thr Arg Pro Lys Met Ser 580 585 590 Ile val Leu Pro Ala Ile Asn Ile Asn Glu Asn val Ile Asn Gly Gln Page 3

Asp Tyr Glu Val Met Met Gln Ile Asp Cys Gln Val Met Asp Thr Arg 610 620

Ile Leu His Ile Lys Ser Ser Ser Val Pro Pro Tyr Leu Arg Asp Gln 625 630 635

Gln Arg Asn Gln Thr Asn Thr Phe Phe Gly Ser Pro Pro Ala Ala Thr
645 650 655

Glu Ala Thr His Val Val Ser Thr Ile Pro Glu Ser Leu Gln 660 665 670

<210> 5 <211> 703

<212> PRT <213> human

<400> 5

Met Ala Glu Leu Met Leu Leu Ser Glu Ile Ala Asp Pro Thr Arg Phe 1 10 15

Phe Thr Asp Asn Leu Leu Ser Pro Glu Asp Trp Gly Leu Gln Asn Ser 20 25 30

Thr Leu Tyr Ser Gly Leu Asp Glu Val Ala Glu Glu Gln Thr Gln Leu 35 40

Phe Arg Cys Pro Glu Gln Asp Val Pro Phe Asp Gly Ser Ser Leu Asp 50 55

Val Gly Met Asp Val Ser Pro Ser Glu Pro Pro Trp Glu Leu Leu Pro 65 70 75 80

Ile Phe Pro Asp Leu Gln Val Lys Ser Glu Pro Ser Ser Pro Cys Ser 85 90 95

Ser Ser Ser Leu Ser Ser Glu Ser Ser Arg Leu Ser Thr Glu Pro Ser 100 105 110

Ser Glu Ala Leu Gly Val Gly Glu Val Leu His Val Lys Thr Glu Ser 115 120 125

Leu Ala Pro Pro Leu Cys Leu Leu Gly Asp Asp Pro Thr Ser Ser Phe 130 135 140

Glu Thr Val Gln Ile Asn Val Ile Pro Thr Ser Asp Asp Ser Ser Asp 145 150 155 160

Val Gln Thr Lys Ile Glu Pro Val Ser Pro Cys Ser Ser Val Asn Ser 165 170 175

Glu Ala Ser Leu Leu Ser Ala Asp Ser Ser Ser Gln Ala Phe Ile Gly
180 185 190 Glu Glu Val Leu Glu Val Lys Thr Glu Ser Leu Ser Pro Ser Gly Cys 195 200 205 Leu Leu Trp Asp Val Pro Ala Pro Ser Leu Gly Ala Val Gln Ile Ser 210 220 Met Gly Pro Ser Leu Asp Gly Ser Ser Gly Lys Ala Leu Pro Thr Arg 225 230 235 240 Lys Pro Pro Leu Gln Pro Lys Pro Val Leu Thr Thr Val Pro Met 245 255 Pro Ser Arg Ala Val Pro Pro Ser Thr Thr Val Leu Leu Gln Ser Leu 265 270 Val Gln Pro Pro Val Ser Pro Val Val Leu Ile Gln Gly Ala Ile 275 280 285 Arg Val Gln Pro Glu Gly Pro Ala Pro Ser Leu Pro Arg Pro Glu Arg 290 295 300 Lys Ser Ile Val Pro Ala Pro Met Pro Gly Asn Ser Cys Pro Pro Glu 305 310 315 Val Asp Ala Lys Leu Leu Lys Arg Gln Gln Arg Met Ile Lys Asn Arg 325 330 335 Glu Ser Ala Cys Gln Ser Arg Arg Lys Lys Glu Tyr Leu Gln Gly 340 345 Leu Glu Ala Arg Leu Gln Ala Val Leu Ala Asp Asn Gln Gln Leu Arg 355 360 365 Arg Glu Asn Ala Ala Leu Arg Arg Leu Glu Ala Leu Leu Ala Glu 370 375 Asn Ser Glu Leu Lys Leu Gly Ser Gly Asn Arg Lys Val Val Cys Ile 385 390 395 400 Met Val Phe Leu Phe Ile Ala Phe Asn Phe Gly Pro Val Ser Ile 405 410 415 Ser Glu Pro Pro Ser Ala Pro Ile Ser Pro Arg Met Asn Lys Gly Glu 420 425 430 Pro Gln Pro Arg Arg His Leu Leu Gly Phe Ser Glu Gln Glu Pro Val
435
440
445

PCT/US2004/024571

WO 2005/012490

Gln Gly Val Glu Pro Leu Gln Gly Ser Ser Gln Gly Pro Lys Glu Pro 450 455 460 Gln Pro Ser Pro Thr Asp Gln Pro Ser Phe Ser Asn Leu Thr Ala Phe 465 470 475 480 Pro Gly Gly Ala Lys Glu Leu Leu Leu Arg Asp Leu Asp Gln Leu Phe
485 490 495 Leu Ser Ser Asp Cys Arg His Phe Asn Arg Thr Glu Ser Leu Arg Leu 500 505 510 Ala Asp Glu Leu Ser Gly Trp Val Gln Arg His Gln Arg Gly Arg Arg 515 520 525 Lys Ile Pro Gln Arg Ala Gln Glu Arg Gln Lys Ser Gln Pro Arg Lys 530 535 540 Lys Ser Pro Pro Val Lys Ala Val Pro Ile Gln Pro Pro Gly Pro Pro S45 550 555 Glu Arg Asp Ser Val Gly Gln Leu Gln Leu Tyr Arg His Pro Asp Arg 565 570 575 Ser Gln Pro Ala Phe Leu Asp Ala Ile Asp Arg Arg Glu Asp Thr Phe 580 585 590 Tyr Val Val Ser Phe Arg Arg Asp His Leu Leu Leu Pro Ala Ile Ser 595 600 605 His Asn Lys Thr Ser Arg Pro Lys Met Ser Leu Val Met Pro Ala Met 610 620 Ala Pro Asn Glu Thr Leu Ser Gly Arg Gly Ala Pro Gly Asp Tyr Glu 625 630 635 Glu Met Met Gln Ile Glu Cys Glu Val Met Asp Thr Arg Val Ile His 645 655 Ile Lys Thr Ser Thr Val Pro Pro Ser Leu Arg Lys Gln Pro Ser Pro 660 665 670 Thr Pro Gly Asn Ala Thr Gly Gly Pro Leu Pro Val Ser Ala Ala Ser 675 680 Gln Ala His Gln Ala Ser His Gln Pro Leu Tyr Leu Asn His Pro 690 700

<210> 6 <211> 678 <212> PRT

<213> mouse

<400> 6

Leu Thr His Pro Ser Cys Glu Gly Glu Val Ser Val Ser Gly Lys Pro
1 10 15

Ala Cys Val Ala Gly Ala Met Glu Ser Pro Phe Ser Pro Val Leu Pro 20 25 30

His Gly Pro Asp Glu Asp Trp Glu Ser Thr Leu Phe Ala Glu Leu Gly 35 40 45

Tyr Phe Thr Asp Thr Asp Asp Val His Phe Asp Ala Ala His Glu Ala 50 55

Tyr Glu Asn Asn Phe Asp His Leu Asn Phe Asp Leu Asp Leu Met Pro 65 70 75 80

Trp Glu Ser Asp Leu Trp Ser Pro Gly Ser His Phe Cys Ser Asp Met 85 90 95

Lys Ala Glu Pro Gln Pro Leu Ser Pro Ala Ser Ser Ser Cys Ser Ile 100 105 110

Ser Ser Pro Arg Ser Thr Asp Ser Cys Ser Ser Thr Gln His Val Pro 115 120 125

Glu Glu Leu Asp Leu Leu Ser Ser Ser Gln Ser Pro Leu Ser Leu Tyr 130 135 140

Gly Asp Ser Cys Asn Ser Pro Ser Ser Val Glu Pro Leu Lys Glu Glu 145 150 155 160

Lys Pro Val Thr Gly Pro Gly Asn Lys Thr Glu His Gly Leu Thr Pro 165 170 175

Lys Lys Lys Ile Gln Met Ser Ser Lys Pro Ser Val Gln Pro Lys Pro 180 185 190

Leu Leu Leu Pro Ala Ala Pro Lys Thr Gln Thr Asn Ala Ser Val Pro 195 200 205

Ala Lys Ala Ile Ile Ile Gln Thr Leu Pro Ala Leu Met Pro Leu Ala 210 215 220

Lys Gln Gln Ser Ile Ile Ser Ile Gln Pro Ala Pro Thr Lys Gly Gln 225 230 235 240

Thr Val Leu Leu Ser Gln Pro Thr Val Val Gln Leu Gln Ser Pro Ala 245 250 255

Val Leu Ser Ser Ala Gln Pro Val Leu Ala Val Thr Gly Gly Ala Ala 260 265 270 Gln Leu Pro Asn His Val Val Asn Val Leu Pro Ala Pro Val Val Ser 275 280 Pro Val Asn Gly Lys Leu Ser Val Thr Lys Pro Val Leu Gln Ser 290 295 300 Ala Thr Arg Ser Met Gly Ser Asp Ile Ala Val Leu Arg Arg Gln Gln 305 310 315 Arg Met Ile Lys Asn Arg Glu Ser Ala Cys Gln Ser Arg Lys Lys Lys 325 Lys Glu Tyr Met Leu Gly Leu Glu Ala Arg Leu Lys Ala Ala Leu Ser 340 345 350 Glu Asn Glu Gln Leu Lys Lys Glu Asn Gly Ser Leu Lys Arg Gln Leu 355 360 365 Asp Glu Val Val Ser Glu Asn Gln Arg Leu Lys Val Pro Ser Pro Lys 370 380 Arg Arg Ala Val Cys Val Met Ile Val Leu Ala Phe Ile Met Leu Asn 385 390 400 Tyr Gly Pro Met Ser Met Leu Glu Gln Glu Ser Arg Arg Val Lys Pro
405 410 415 Ser Val Ser Pro Ala Asn Gln Arg Arg His Leu Leu Glu Phe Ser Ala 420 425 430 Lys Glu Val Lys Asp Thr Ser Asp Gly Asp Asn Gln Lys Asp Ser Tyr
435
440
445 Ser Tyr Asp His Ser Val Ser Asn Asp Lys Ala Leu Met Val Pro Ser 450 460 Glu Glu Pro Leu Leu Tyr Met Pro Pro Pro Pro Cys Gln Pro Leu Ile 465 470 475 480 Asn Thr Thr Glu Ser Leu Arg Leu Asn His Glu Leu Arg Gly Trp Val 485 490 495 His Arg His Glu Val Glu Arg Thr Lys Ser Arg Arg Met Thr Asn Ser 500 505 510 Gln Gln Lys Ala Arg Ile Leu Gln Gly Ala Leu Glu Gln Gly Ser Asn 515 520 525

Ser Gln Leu Met Ala Val Gln Tyr Thr Glu Thr Thr Ser Ile Ser Arg 530 540

Asn Ser Gly Ser Glu Leu Gln Val Tyr Tyr Ala Ser Pro Gly Ser Tyr 545 550 555 560

Gln Gly Phe Phe Asp Ala Ile Arg Arg Gly Asp Thr Phe Tyr Val 565 570 575

Val Ser Phe Arg Arg Asp His Leu Leu Leu Pro Ala Thr Thr His Asn 580 585 590

Lys Thr Thr Arg Pro Lys Met Ser Ile Val Leu Pro Ala Ile Asn Ile 595 600 605

Asn Asp Asn Val Ile Asn Gly Gln Asp Tyr Glu Val Met Met Gln Ile 610 620

Asp Cys Gln Val Met Asp Thr Arg Ile Leu His Ile Lys Ser Ser Ser 625 630 635

val Pro Pro Tyr Leu Arg Asp His Gln Arg Asn Gln Thr Ser Thr Phe 645 655

Phe Gly Ser Pro Pro Thr Thr Glu Thr Thr His Val Val Ser Thr 660 665 670

Ile Pro Glu Ser Leu Gla

murine

<210> 7

<211> 699

<212> PRT

<400> 7

Met Ala Glu Leu Met Leu Leu Ser Glu Ile Ala Asp Pro Thr Arg Phe 1 10 15

Phe Thr Asp Asn Leu Leu Ser Pro Glu Asp Trp Asp Ser Thr Leu Tyr 20 25 30

Ser Gly Leu Asp Glu Val Ala Glu Glu Gln Ala Gln Leu Phe Arg Cys
35 40 45

Val Glu Gln Asp Val Pro Phe Asp Ser Ser Ser Leu Asp Val Gly Met 50 55

Asp Val Ser Pro Pro Glu Pro Pro Trp Asp Pro Leu Pro Ile Phe Pro 65 70 75 80

Asp Leu Gln Val Lys Ser Glu Pro Ser Ser Pro Cys Ser Ser Ser Ser Pag**e 9** 85

90

95

Leu Ser Ser Glu Ser Ser His Leu Ser Thr Glu Pro Pro Ser Gln val 100 105 110 Pro Gly Val Gly Glu Val Leu His Val Lys Met Glu Ser Leu Ala Pro 115 120 125 Pro Leu Cys Leu Leu Gly Asp Asp Pro Ala Ser Pro Phe Glu Thr Val 130 135 140 Gln Ile Thr Val Gly Ser Ala Ser Asp Asp Leu Ser Asp Ile Gln Thr 145 150 155 Lys Leu Glu Pro Ala Ser Pro Ser Ser Ser Val His Ser Glu Ala Ser 165 170 175 Leu Leu Ser Ala Asp Ser Pro Ser Gln Pro Phe Ile Gly Glu Glu Val 180 185 190 Leu Glu Val Lys Thr Glu Ser Pro Ser Pro Pro Gly Cys Leu Leu Trp 195 200 205 Asp Val Pro Ala Ser Ser Leu Gly Ala Val Gln Ile Ser Met Gly Pro 210 225 220 Ser Pro Asp Ser Ser Ser Gly Lys Ala Pro Ala Thr Arg Lys Pro Pro 225 230 235 Leu Gln Pro Lys Pro Val Val Leu Thr Thr Val Pro Val Pro Pro Arg 245 250 255 Ala Gly Pro Thr Ser Ala Ala Val Leu Leu Gln Pro Leu Val Gln Gln 260 265 270 Pro Ala Val Ser Pro Val Val Leu Ile Gln Gly Ala Ile Arg Val Gln 275 280 285 Pro Glu Gly Pro Ala Pro Ala Ala Pro Arg Pro Glu Arg Lys Ser Ile 290 295 300 Val Pro Ala Pro Met Pro Gly Asn Ser Cys Pro Pro Glu Val Asp Ala 305 310 315 Lys Leu Leu Lys Arg Gln Gln Arg Met Ile Lys Asn Arg Glu Ser Ala 325 330 335 Cys Gln Ser Arg Arg Lys Lys Lys Glu Tyr Leu Gln Gly Leu Glu Ala 340 345 350 Arg Leu Gln Ala Val Leu Ala Asp Asn Gln Gln Leu Arg Arg Glu Asn

Pag**e 10**

355

360

365

Ala Ala Leu Arg Arg Arg Leu Glu Ala Leu Leu Ala Glu Asn Ser Gly 370 380 Leu Lys Leu Gly Ser Gly Asn Arg Lys Val Val Cys Ile Met Val Phe 385 390 395 400 Leu Leu Phe Ile Ala Phe Asn Phe Gly Pro Val Ser Ile Ser Glu Pro
405
410
415 Pro Pro Ala Pro Met Ser Pro Arg Met Ser Arg Glu Glu Pro Arg Pro 420 425 430 Gln Arg His Leu Leu Gly Phe Ser Glu Pro Gly Pro Ala His Gly Met 435 Glu Pro Leu Arg Glu Ala Ala Gln Ser Pro Gly Glu Gln Gln Pro Ser 450 455 460 Ser Ala Gly Arg Pro Ser Phe Arg Asn Leu Thr Ala Phe Pro Gly Gly 465 470 480 Ala Lys Glu Leu Leu Leu Arg Asp Leu Asp Gln Leu Phe Leu Ser Ser 490 495 Asp Cys Arg His Phe Asn Arg Thr Glu Ser Leu Arg Leu Ala Asp Glu 500 505 510 Leu Ser Gly Trp Val Gln Arg His Gln Arg Gly Arg Arg Lys Ile Pro 515 520 525 His Arg Ala Gln Glu Arg Gln Lys Ser Gln Leu Arg Lys Lys Ser Pro 530 535 Pro Val Lys Pro Val Pro Thr Gln Pro Pro Gly Pro Pro Glu Arg Asp 545 550 560 Pro Val Gly Gln Leu Gln Leu Tyr Arg His Pro Gly Arg Ser Gln Pro 565 570 575 Glu Phe Leu Asp Ala Ile Asp Arg Glu Asp Thr Phe Tyr Val Val 580 585 Ser Phe Arg Arg Asp His Leu Leu Leu Pro Ala Ile Ser His Asn Lys 595 600 Thr Ser Arg Pro Lys Met Ser Leu Val Met Pro Ala Met Ala Pro Asn 610 620 Glu Thr Val Ser Gly Arg Gly Pro Pro Gly Asp Tyr Glu Glu Met Met

625 630 635 640

Gln Ile Glu Cys Glu Val Met Asp Thr Arg Val Ile His Ile Lys Thr 645 655

Ser Thr Val Pro Pro Ser Leu Arg Lys Gln Pro Ser Pro Ser Pro Gly 660 665

Asn Thr Thr Gly Gly Pro Leu Pro Gly Ser Ala Ala Ser Pro Ala His 675

Gln Ala Ser Gln Pro Leu Tyr Leu Asn His Pro 690 695

<210> 8 <211> 2474 <212> DNA <213> human

<400> aagatattaa tcacggagtt ccagggaaaa ggaacttgtg aaatggggga gccggctg**gg** 60 gttgccggca ccatggagtc accttttagc ccgggactct ttcacaggct ggatgaagat 120 tgggattctg ctctctttgc tgaacttggt tatttcacag acactgatga gctgcaattg 180 gaagcagcaa atgagacgta tgaaaacaat tttgataatc ttgattttga tttggatttg 240 ttaccttggg agtcagacat ttgggacatc aacaaccaaa tctgtacagt taaagatatt 300 aaggcagaac cccagccact ttctccagcc tcctcaagtt attcagtctc atctcctcgg 360 tcagtggact cttattcttc aactcagcat gttcctgagg agttggattt gtcttctagt 420 tctcagatgt ctcccctttc cttatatggt gaaaactcta atagtctctc ttcaccggag 480 ccactgaagg aagataagcc tgtcactggt tctaggaaca agactgaaaa tggactgact 540 ccaaagaaaa aaattcaggt gaattcaaaa ccttcaattc agcccaagcc tttattgctt 600 ccagcagcac ccaagactca aacaaactcc agtgttccag caaaaaccat cattattcag 660 acagtaccaa cgcttatgcc attggcaaag cagcaaccaa ttatcagttt acaacctgca 720 cccactaaag gccagacggt tttgctgtct cagcctactg tggtacaact tcaagcacct 780 ggagttctgc cctctgctca gccagtcctt gctgttgctg ggggagtcac acagctccct 840 aatcacgtgg tgaatgtggt accagcccct tcagcgaata gcccagtgaa tggaaaactt 900 tccgtgacta aacctgtcct acaaagtacc atgagaaatg tcggttcaga tattgctgtg 960 ctaaggagac agcaacgtat gataaaaaat cgagaatccg cttgtcagtc tcgcaagaag 1020 aagaaagaat atatgctagg gttagaggcg agattaaagg ctgccctctc agaaaacgag 1080 caactgaaga aagaaaatgg aacactgaag cggcagctgg atgaagttgt gtcagagaac 1140 cagaggetta aagteectag tecaaagega agagttgtet gtgtgatgat agtattggca 1200 tttataatac tgaactatgg acctatgagc atgttggaac aggattccag gagaatgaac 1260 cctagtgtgg gacctgcaaa tcaaaggagg caccttctag gattttctgc taaagaggca 1320 Page 12

				•	•	
caggacacat	cagatggtat	tatccagaa a	aacagctaca	gatatgat ca	ttctgtttca	1380
aatgacaaag	ccctgatggt	gctaactgaa	gaaccattgC	tttacattcc	cccacctcct	1440
tgtcagccc c	taattaatac	aacagagtct	ctcaggttaa	atcatgaa ct	tcgaggat gg	1500
gttcatagac	atgaagtaga	aaggaccaag	tctagaagaa	tgacaaataa	tcaacag aaa	1560
acccgtatt c	ttcagggtgt	tgtggaacag	ggctcaaatt	ctcagctgat	ggctgttcaa	1620
tacacagaaa	ccactagtag	tatcagcagg	aactcaggga	gtgagctaca	agtgtat tat	1680
gcttcaccca	gaagttatca	agacttttt	gaagccatcc	gcagaaggg g	agacacattt	1740
tatgttgtgt	catttcgaag	ggatcacctg	ctgttaccag	ctaccaccca	taacaag acc	1800
acaagaccaa	aaatgtcaat	tgtgttacca	gcaataaaca	taaatgaga a	tgtgatca at	18 60
gggcaggact	acgaagtgat	gatgcagatt	gactgtcagg	tgatggacac	caggat cctc	19 20
catatcaaaa	gttcgtcggt	tcctccttac	ctccgaga tc	agcagag gaa	tcaaacca ac	19 80
accttctttg	gctcccctcc	cgcagccaca	gaggcaaccc	acgttgt cag	caccatccct	2040
gagtcattac	aatagcaccc	gcagctatgt	ggaaaactga	gcgtggg acc	cccaga ctga	2100
agagcaggtg	agcaaaatgc	tgcttttcct	tggtgg cagg	cagaga actg	ttcgtactag	2160
aattcaagg a	gaaaagaag <mark>a</mark>	agaaataaa a	gaagctgctc	catttt tcat	catctaccca	2220
tctatttgga	aagcactgga	attcagatgc	aagagaa caa	tgtttct tca	gtggcaa atg	2280
tagccctgca	tcctccagtg	ttacctggtg	tagattttt	tttctgta cc	tttctaa acc	2340
tctcttccct	ctgtgatggt	tttgtgttta	aacagtc atc	ttcttttaaa	taatatccac	2400
ctctcctttt	tgcca tttca	cttattgatt	cataaagtga	attttat tta	aagctaa aaa	2460
aaaaaaaaaa	aa aa	•				2474

<210> 9 <211> 2622 <212> DNA <213> human

aaccgtctcc tggttggggg gtggggggga aagatggcgg agctgatgct gctcagcgag 60 120 attgctgacc cgacgcgttt cttcaccgac aacctgctta gcccggagga ctggggtctg 180 cagaacagca ccttgtattc tggcctagat gaagtggccg aggagcagac gcagctcttc 240 cgttgcccgg agcaggatgt cccgtttgac ggcagctccc tggacgtggg gatggatgtc agcccctctg agcccccatg ggaactcctg ccgatcttcc cagatcttca ggtgaagtct 300 360 gagccatctt cccctgctc ttcctcctcc ctcagctccg agtcatcgcg tctctccaca 420 gagccatcca gcgaggctct tggggtaggg gaggtgctcc atgtgaagac agagtccttg gcacccccac tgtgtctcct gggagatgac ccaacatcct catttgaaac cgtccagatc 480 aatgttatcc ccacctctga tgattcctca gatgtccaga ccaagataga acctgtctct 540 ccatgttctt ccgtcaactc tgaggcctcc ctgctctcag ccgactcctc cagccaggct 600

tttataggag	aggaggtcct	ggaagtgaa g	acagagtccc	tgtccccttc	aggat gcctc	660
ctgtgggatg	tcccagcccc	ctcacttgga	gctgtccaga	tcagcatggg	cccatecctt	720
gatggctcct	caggcaaagc	cctgcccacc	cggaagccgc	cactgcag cc	caaacctgta	780
gtgctaacca	ctgtcccaat	gccatccaga	gctgtgcctc	ccagcaccac	agtccttctg	840
cagtccctcg	tccagccacc	cccagtgtcc	ccagttgtcc	tcatccaggg	tgcta ttcga	900
gtccagcctg	aagggccgg c	tccctctcta	ccacggcctg	agaggaaga g	catcgttecc	960
gctcctatgc	ctggaaactc	ctgcccgcct	gaagtggat g	caaagctgct	gaagcg gcag	1020
cagcgaatga	tcaagaaccg	ggagtcagc c	tgccagtccc	ggagaaagaa	gaaaga gtat	1080
ctgcagggac	tggaggctcg	gctgcaagca	gtactggctg	acaaccagca	gctccgccga	1140
gagaatgctg	ccctccggcg	gcggctggag	gccctgctgg	ctgaaaacag	cgagc tcaag	1200
ttagggtctg	gaaacaggaa	ggtggtctgc	atcatggt ct	tccttctctt	cattgccttc	1260
aactttggac	ctgtcagcat	cagtgagcct	ccttcagctc	ccatctctcc	tcggatg aac	1320
aagggggagc	ctcaaccccg	gagacacttg	ctggggttct	cagagcaaga	gccag ttcag	1380
ggagttgaac	ctctccaggg	gtcctcccag	ggccctaagg	agcccca gcc	cagccccaca	1440
gaccagccca	gtttcagcaa	cctgacagcc	ttccctgggg	gcgccaagga	gctactacta -	1500
agagacctag	accagctctt	cctctcctct	gattgccggc	acttcaaccg	cactga gtcc	1560
ctgaggcttg	ctgacgagtt	gagtggctgg	gtccagcgcc	accagagag g	ccggagg aag	1620
atccctcaga	gggcccagga	gagacagaag	tctcagccac	ggaagaag tc	acctcca gtt	1680
aaggcagtcc	ccatccaacc	ccctggaccc	ccagaaagg g	attctgtgg g	ccagc tgcaa	1740
ctatatcgcc	acccagaccg	ttcgcagcca	gcattcttgg	atgcaatt ga	ccgacgggaa	1800
gacacatttt	atgttgtctc	tttccgaagg	gaccacctgc	tgctcccagc	catcagecac	1860
aacaagacct	cccggcccaa	gatgtccctg	gtgatgcctg	ccatggcccc	caatgag acc	1920
ctgtcaggcc	gtggggcccc	gggggactat	gaggagatg <mark>a</mark>	tgcagatc ga	gtgtgag gtc	19 80
atggacacca	gggtgattca	catcaagacc	tccacagtgc	cccctcgct	ccgaaaa cag	2040
ccatccccaa	ccccaggcaa	tgccacaggt	ggccccttgc	cagtctctgc	agccagccag	2100
gcccaccagg	cctcccacca	gcccctctac	ctcaatcatc	cctgacctct	gccat ₹caca	2160
ctgacttaga	acggggggag	ggggtaccag	gtggccaggt	gggactgttt	caaatttccc	2220
tgatccccag	gcttggggca	attggtaaag	gaaagagcag	gtgtgggggt	taagcac tta	2280
tttgaggtgg	gggtgttcac	ctctcttctc	atcccttttc	agaatatagg	gctcctctca	2340
ttcctgtgaa	ccccagtcc	tggcttcttt	gtttgagggg	attgtgtga g	gttcagtt gt	2400
ggggtgggt g	gtgagctgct	gcatatttt	tattttgttt	ctctagtgtt	atggcagt gg	2460
aggtggga at	ttagtcccca	ggtgggacaa	gggaagtttt	ttcattttgg	agctag ttac	2520
tgggagtaag	ggagggtggg	gtgggggga	gttcaggttt	atgtgtg tgc	atttctttt	2580
tattattatt	aaataaacaa	cttggaggga	gttgaaaaaa	a a		2622

<210> 10 <211> 4447 <212> DNA <213> murine

<400> 10						•
	aggtgtctgt	ttcggggaag	ccggcttgtg	ttgccggcg c	catggag tcg	60
ccttttagtc	cggttcttcc	tcatggacca	gatgaaga ct	gggagtcgac	gttgtttgct	120
gaacttggct	atttcacaga	.cactgatgat	gtgcactttg	atgcagca ca	tgaggct tat	180
gaaaataatt	ttgatcatct	taattttgat	ttggatttga	tgccttggga	gtcagac cta	240
tggagccccg	gcagccactt	ctgctcaga c	atgaaggcag	agccccag cc	tctttctccg	300
gcttcctcca	gttgctccat	ctcctctcct	cggtccacag	actcgtg ttc	ttcaact cag	3 60
cacgttcctg	aggagttgg a	tttgttgtct	agttctcagt	ccccctttc	cttatatg gc	420
gacagctgta	atagcccctc	ctctgtagag	ccactgaag g	aagagaag cc	tgtca ctggt	480
cctggaaaca	aaacagaa ca	tggactgact	ccaaagaaaa	aaattcagat	gagttt aaaa	540
ccttcagttc	agcccaag cc	tttattactt	ccagcagcgc	ccaagactca	aaccaat gcc	600
ggtgtcccag	caaaagccat	catcattcag	acactaccag	cccttatgcc	actggcaaag	660
cagcagtcga	ttatcagcat	acagcctgcg	cccaccaaag	gccaga ctgt	tttgctctct	720
cagccgactg	tggttcaact	tcagagccct	gcggttctgt	cgtctgct c a	gccggtt ctt	780
gcagtcactg	ggggagccgc	acagctacct	aaccatgtg g	tgaattgttg	ctggccagcc	640
ccctgtggtg	agcagcccg g	tgaatggaaa	actttccgtg	actaaacctg	ttctacaaag	900
tgccaccaga	agtatgggtt	cggatatcgc	tgtgctgag g	agacagca gc	ggatgataaa	960
gaaccgagag	tctgcttgtc	agtcgcgcaa	gaagaagaaa	gagtatatgc	taggact gga	1020
ggccaggcct	caaggctgcc	ctctcataga	atgagcagct	gtagaagga g	aatg gctccc	1080
tgaagcgaca	gctggacgag	gtggtgtcag	agaaccagag	gctcaaag tc	ccaagtccaa	1140
agcgaagag c	tgtctgtgtg	atgatagtat	tagcatttat	aatgctgaa c	tatgggceca	1200
tgagcatgct	ggagcaagaa	tcccgaagag	tgaaaccta g	tgtgagccct	gccaatcaga	1260
ggaggcatct	cttggaattt	tcagcaaaag	aagttaaaga	cacatcagat	ggtgaca acc	1320
agaaagacag	ttacagctat	gatcactctg	tgtccaatga	caaagcttta	atggtg ctaa	1380
gtgaagagcc	attgcttta t	atgcctcca c	ctccatgtca	acccctgatt	aacacaacag	1440
agtctctcag	gttgaaccat	gaacttcgag	gctgggttca	tagacatgaa	gtggaaag ga	1500
ccaaatctag	aagaatgaca	aatagccaac	agaaagcccg	cattctccag	ggtgctct gg	1560
aacagggctc	taattctcag	ctgatgg c t g	tccagtaca c	agaaaccact.	agcatca gta	1620
ggaattctgg	gagtgagctg	caagtgtatt	acgcctcccc	tggaagttac	caaggct tct	1680
ttgacgccat	ccgcaggagg	ggagatacgt	tttacgttgt	ctcatttcga	agggatcatc	1740
tgctattacc	agctaccac c	cacaacaaga	ccacaagacc	aaaaatg tca	attgtat tac	1600
cagcaataa a	cataaatgat	aatgtgatc a	atgggcagga Pag e 1	ctatgaag ta S	atgatgcaġ a	1860
	·			-		

ttgactgtca	ggtgatgga c	accaggatc c	tccacatca a	aagctcctcg	gttccccctt	1920
atctccggg a	tcatcagcg g	aaccaaacca	gcaccttctt	tggttcccct	ccaacaacca	1980
cagagacgac	ccatgtggtc	agcaccatc c	ctgagtcgtt	gcagtagtgc	ccgag ctgcg	2040
ctggacagca	'gagactgaa g	agctggtgaa	gatgctgctc	tctgcctctt	cggcaagcag	2100
agacttgcct	tgtacgcaa c	tccaggggaa	gaggaagaga	gaacaggaag	tgcgctg ctt	2160
gtcaccgtcc	acccagtggg	gtggaacatg	ctagcgagc a	attctctggt	ggcagtg cag	2220
ccctgtgggc	agtgtcg cct	ggtgttggtt	ctgctgtg tc	atctttagtg	cttttctcaa	2280
tgtgtgtttg	gttctcagtt	atcttccttc	aggtcaga cc	cacttcctct	tctgtcca ct	2340
gcacttcctg	gtgcagtaaa	gagatttgta	tttaaagctt	tagaacacat	gctcatgt gg	2400
tttccaccaa	ttggctttct	ctctcctttg	gttcaaatc c	attctgaatg	ttatactt ga	2460
gaaaacacat	ttcaaaaaa c	cgagcagc ca	aaaacatccc	acaaagag tc	aaaacag t¢t	25.20
agagtttggg	taaagggatt	atctccagtt	ggtaagagtt	tatttttact	tgtga tttgt	2580
ggttcagccc	tggacaaata	actgttgtgg	gggtcacag <mark>a</mark>	gtgagccaca	cactgga gac	.2640
aagggaagg g	aaggccagtg	gtggaatgta	aggggaag tg	actccatttt	catatgtatt	2700
taaacacaga	gttcctgtgg	cctcggtaag	ctcagagcta	tagccaccct	cagtgttg ga	2760
actcggctaa	tcagcagag a	tcttcaaag a	tctcagggca	catgcttgcc	tctcattgtg	2820
gaccctcagc	ccagagcata	ctcctgtgaa	accagact ca	gcaaagggac	ttgga ggtca	2880
ctaggcttaa	gcaagactag	agagtttc cc	ttaaggacca	acagtgcaca	gagcaa gcat	2940
ggcttcccag	agaagctgc a	gcacagtatg	gtgaagtt ct	cagtttttcc	agtggaa aga	3000
tgataaagga	attaagctct	ctttgttgtt	gctatgg ctg	tgaacatg gc	tttaateeta	3060
gcaccatttg	gaaggaaag g	caggctttgt	ttgatatca g	cctggcctac	atttcaa att	3120
ccaggacagg	acagctaaag	ctatataaag	aacccacctc	aaaaaatag a	tgaat gaata	3180
aatgagtaaa	taaacaaat a	caaacaaaaa	gcaaagttat	gttcacatat	attttatt gt	3240
attttgcctg	cttccttcac	catagcaag c	agccacattt	ctattgcact	gtacattgta	3300
cgttacaagt	tcacagaaat	ggatgccagg	actcatgt ca	gtcatgtgct	gcctcccttc	3360
ccaggatttc	agcaggttc t	catagactct	tcccagcctg	gcttgcccat	tgtcagg tgg	3420
tcccattcca	gtaagcacaa	tggcggctaa	gtcctctt ct	ctctacaagg	agtgacacac	3480
agtcaggtca	tcttttgcct	gtggccccat	tatgcctgg c	actgttca cc	aacaactgtt	3540
ccctggacag	cactgctgcc	atctaagcta	aggtgagat g	ttttcgggg c	agggcca ttc	3600
ttgctgaatt	cagtgccgca	gtccatcctg	attggctct c	gggtgatt tt	cagacaag ac	36 60
ctgtttgtcc	·cgggggctg g	tcctctaatg	g gtgc caag g	agaagatacc	aaatacatg g	3720
agtaccttta	ggagtagcca	tttgtggggg	aggttgggc t	accctgtg gc	catgttcttc	3780
ctgcctgtga	agcagctcaa	aacgaggatg	tgactgtgg g	ctgtggacag	aggcagca ca	38 40
cgcattcctg	atgctgatct	gctgagacac	gaatagaatc Page 10		ccagtgta cc	3900

	agtgcctcag atcaaagacc	tcaatagtgt	cacgtttgct	aaggctgat g	cctctcc tac	39 60
	aggtaacagt ggggatgacc	gttggaaggc	acagccaaag	agcagacag a	agttaagg tg	40 20
	gccacagcac aggtcaggga	tccaaggagc	tggggaggac	tgctcaaa ac	tagtctgg aa	40 80
	gcttgccttc tctgctcctg	ctgaccatca	ggtcctgtca	ttaccac tct	taggtcc gtc	4140
	ttatgagatg aggaatgggg	ccctcctcag	gggagagttt	cagaaatga g	ggaaag gcaa	4200
	ttatagatag aaagaagtat	cctgccattt	aaattgctg a	aagagctaga	atccctgg gc	4260
	tcggtagttt gtatcttaat	gtttgtgcgc.	tagcacaggc	ccattggaga	ggaaaag ctg	4320
	ttgtcctggg agcaaagtaa	gcagccattc	aggtctca tt	ttttattttg	gtatgc ttgc	4380
	ccttgggtgt ttatagcccg	gaactgtagg	agctatgtat	gtacataa ta	tatatat tt	4440
	ttaattt	:	• • •		·	4447
•	<210> 11 <211> 2514 <212> DNA <213> murine					4447
•	<210> 11 <211> 2514 <212> DNA	ggggggtgg g	gggaaga tgg	cggagctgat	gctcct cact	4447 60
•	<210> 11 <211> 2514 <212> DNA <213> murine <400> 11		2—		·	
	<210> 11 <211> 2514 <212> DNA <213> murine <400> 11 gcggggagcc ggctcatggt	cttcttcacc	gacaacctg c	tgagtccgg a	ggactgg gac	60
	<210> 11 <211> 2514 <212> DNA <213> murine <400> 11 gcgggggagcc ggctcatggt gagatcgccg acccgacgcg	cttcttcacc ggatgaagtg	gacaacctgc gccgaggagc	tgagtccgga aggcacagtt	ggactggg ac gttccgttgc	60 1.20
	<210> 11 <211> 2514 <212> DNA <213> murine <400> 11 gcggggagcc ggctcatggt gagatcgccg acccgacgcg agcaccttgt acagtggcct	cttcttcacc ggatgaagtg tgacagcagc	gacaacctgc gccgaggagc tctctggatg	tgagtccgga aggcacagtt tggggatgga	ggactgggac gttccgttgc tgtcagcccc	60 1.20 180

tectetect getegteete eteceteage teagagteet cacatette cacagagece

cccagccagg tccctggtgt aggcgaggtg ctgcatgtga agatggagtc cctggcaccc

ccactctgcc tgctggggga tgatccagca tccccctttg aaacggtcca gatcactgtg

ggctctgcct ctgatgatct ttcagatatc cagaccaagc tggaacctgc ctctccgtct tcttctgtcc actctgaggc ctccttgctg tcagcagact ctcccagtca gccttttata

ggagaggagg ttctggaagt gaagacagag tctccgtcc ctccagggtg cctcctgtgg

gatgtcccag cctcttcgct cggagctgtc cagatcagca tgggtccatc ccctgatagt tcctcaggga aagctccggc cactcggaag cctccactgc agcccaagcc tgtggtacta

accacagttc cggtgccacc tagagctggg cctaccagcg ctgccgtcct cctgcaaccc

ctggtccagc agcctgcggt gtccccagtg gtcctcatcc aaggtgctat ccgagtccag

cctgaagggc cagctcccgc agctccccgg cctgagagga agagcattgt tccagccct

atgccgggga actcctgccc gcctgaagtg gatgcaaagc tgttgaagcg gcagcagcgg atgatcaaga atcgagagtc ggcctgccag tcccgccgca agaagaaaga gtacctgcca

aggcctggag gccccggctg caggctgtgc tggccgacaa ccagcagctg cgcagggaga acgctgcct ccggcggcgg ctggaggccc tgctggcaga gaacagcggg ctcaagctgg

360

420 480

540

600

660 7.20

780 840

900

960

1020

108**0** 114**0**

1200

PCT/US2004/024571

	ggtctggga a	caggaaggtt	gtctgcatca	tggtcttcct	tctcttcatt	gccttcaa ct	1260
	tttggcctgt	gagcatcagc	gagccgcctc	cagctcccat	gtctcctcgg	atgagcagg g	1320
	aggaacctcg	accccagagg	cacctgctgg	gcttctcaga	accagggc ca	gctcatgg ca .	1380
	tggaacccct	tcgggaagcc	gcccagagcc	ccggggagca	gcagcccag c	tctgcag gca	.1440
	ggcccagctt	cagaaacctg	acggccttcc	ссдддддадс	caaggaggct	gctgctga ga	1500
	gacctggacc	agctcttcct	ctcctcagac	tgtcgccatt	tcaaccgaa c	tgagtc tctg	1560
	aggcttgctg	atgagctgag	tggctgggtc	caacgtca cc	agagaggtcg	acggaag ata	1620
	cctcacaggg	cccaggagag	acagaagtct	cagctacgga	agaagtct cc	tccagtga aa	1680
	cctgtcccca	cccaacctcc	aggaccccct	gaaagggacc	ccgtgggcca	gctgcag ctc	1740
	taccgccac c	ccggccgctc	gcagccggag.	tttctagacg	caattgaccg	gagggag gat	1800
	accttctatg	ttgtctcctt	ccgaagggac	cacctgctgc	tcccagccat	cagccaccac	1860
	aagacatcca	ggcccaagat	gtcgctggtg	atgccagcca	tggcccccaa	tgagacc gtg	1920
•	tcaggccggg	gcccccagg	ggactatgag	gagatgatgc	agatcgagt g	tgaggt catg	19 80
	gacaccaggg	tgattcacat	caagacctct	acggtgcccc	cctcgctccg	gaagcag ccg	2040
	tccccatccc	cgggcaatac	cacaggtggc	cccttgccag	gctccgcag c	tagtcctgcc	2100
	catcaggcct	cccagcccct	ttacctcaat	caccctgac	atcctcacct	cacagtg act	2160
	tagaaccggg	ttagggaacc	tgatcctggg	gctcgggg gc	aattgtaaag	gaagacgg gg	2220
	tgtgggggtt	aagcactta g	tgggactagg	gtgggtggtt	cacctctctt	ctcactcttt	2280
	ccagaaata t	agggctcctc	tcattcctgc	actcccagt c	ctctttcccc	gagggtacct	2340
	cgtgagggtt	tccccatat	cctcttcatt	ctctccttta	tctgtttgg g	agtcaagg tg	2400
•	ggactaggtc	gccaggtgg g	acaagggatg	gttgtgggt g	gcagaag tca	gtttatgtgt	2460
	gtgcgtatct	tttttttatt	attattaaat	aaacaacgt g	gaggggtg ta	aag g	2514